

### **REMARKS**

In response to the Final Office Action mailed May 14, 2008, Applicants respectfully request reconsideration based on the amendments herein and the following remarks. Applicants respectfully submit that the claims as presented herein are in condition for allowance.

Claims 1-7, 9-12, 14 and 16-22 are pending in the present application. Claims 1-7, 9-12, 14 and 16-22 have been amended, while new claims 24-27 have been added. No new matter has been added by the amendments or new claims. Specifically, support for the amendments and new claims can be found at least in FIG. 3 and at paragraph [0052] of the application as filed.

Applicants respectfully request reconsideration of claims 1-7, 9-12, 14, 16-22 and 24-27 based upon the amendments and at least the following remarks.

#### **Claim Rejections Under 35 U.S.C. §103**

For an obviousness rejection to be proper, the Examiner must meet the burden of establishing that all elements of the invention are disclosed in the prior art and that the prior art relied upon, coupled with knowledge generally available in the art at the time of the invention, must contain some suggestion or incentive that would have motivated the skilled artisan to modify a reference or combined references. *In re Fine*, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988); *In Re Wilson*, 165 U.S.P.Q. 494, 496 (C.C.P.A. 1970); *Amgen v. Chugai Pharmaceuticals Co.*, 927 U.S.P.Q.2d, 1016, 1023 (Fed. Cir. 1996).

Claims 1, 2, 20 and 21 stand rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Amundson et al. (U.S. Patent No. 6,545,291, hereinafter "Amundson") in view of Hanazawa et al. (U.S. Patent No. 5,953,088, hereinafter "Hanazawa").

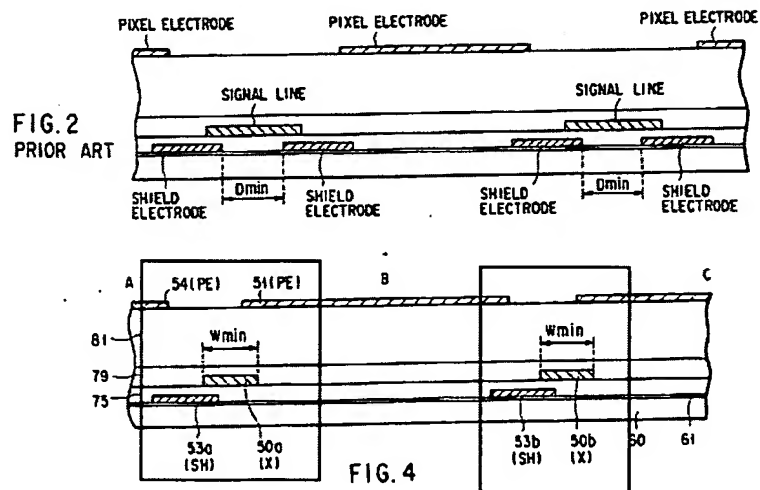
Regarding independent claims 1 and 20, the Examiner states that Amundson teaches all of the elements thereof except "a first pixel electrode disposed in a first region restricted by the gate line and the data line, and as second pixel electrode disposed in a second region restricted by the gate line and the data line and disposed adjacent to the first region such that one of the gate line and the data line interposed between the first pixel electrode and the second pixel electrode and overlaps a portion of the first pixel electrode and portion of the second pixel electrode",

which the Examiner further states is taught by Hanazawa, primarily at FIG. 3. Applicants respectfully traverse for at least the following reasons.

It is respectfully noted that claims 1 and 20 have been amended to further describe and differentiate the claimed invention over the cited prior art. Specifically, claims 1 and 20 have been amended to disclose that, as shown in FIG. 3, data lines 171 to the left and right of the pixel electrode 191 (disposed therebetween) totally and continuously overlap both respective (left and right) sides of the pixel electrode 191. In contrast, both Amundson and Hanazawa teach inventions where portions of the pixel electrode are not overlapped with data lines. See, e.g., FIGS. 3, 4A and 5A of Amundson, and FIGS. 1-4, 6-11 and 13-17 of Hanazawa.

More particularly and with reference to Hanazawa, for example, a shield electrode overlaps a space between a pixel electrode and a signal line (i.e., a data line). Thus, as shown in FIG. 2 of Hanazawa, shown below, the pixel electrode and the signal line do not overlap each other. Instead, the shield electrode overlaps the space between the pixel electrode and the signal line.

Further, in FIGS. 4, 11 and 17 of Hanazawa (shown below), it can be seen that the pixel electrode (51, PE) and the left signal line (50a) overlap each other, while the right signal line (50b) does not overlap the pixel electrode (51, PE).





In addition, referring to FIG. 3 of Hanazawa (below) and the cross-section thereof shown in FIG. 4 (above), it can be seen that entire lengths of opposing (left and right) sides of the pixel electrode (51, PE) do not overlap corresponding (left and right) data lines (not labeled in FIG. 3). Specifically, a portion of the right side of the pixel electrode (51, PE) between points B and C of line IV-IV is covered by the shielding electrode (53b, SH) but not by the right data line, as shown in FIGS. 3 and 4 of Hanazawa.

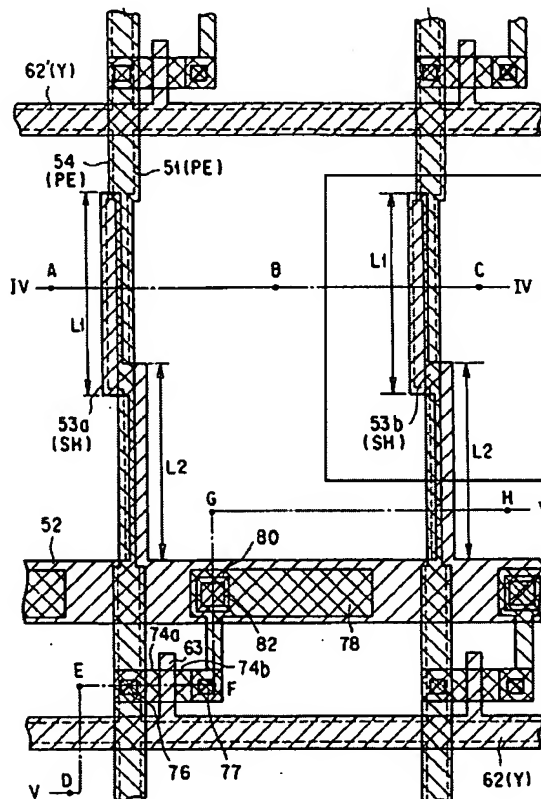


FIG. 3

Therefore, neither Amundson nor Hanazawa, alone or in combination, teach or suggest entire lengths of opposing edges defining a first side and a second side of the first pixel electrode along the second direction between the first gate line and the second gate line overlap the first data line and the second data line, respectively, as in amended claims 1 and 20.

Thus, it is respectfully submitted that independent claims 1 and 20, including claims depending therefrom, i.e., claims 2-6 and 21-22 define over the cited references.

Accordingly, it is respectfully requested that the rejection of claims 1, 2, 20 and 21 under 35 U.S.C. 103(a) be withdrawn.

Claim 14 stands rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Hasegawa et al. (U.S. Patent No. 7,173,602, hereinafter "Hasegawa") in view of Hanazawa. The Examiner states that Hasegawa discloses all of the elements of claim 14 except "a first pixel electrode disposed in a first region restricted by the gate line and the data line, and as second pixel electrode disposed in a second region restricted by the gate line and the data line and disposed adjacent to the first region such that one of the gate line and the data line interposed between the first pixel electrode and the second pixel electrode and overlaps a portion of the first pixel electrode and portion of the second pixel electrode", which the Examiner further states is taught by Hanazawa, primarily at FIG. 3. Applicants respectfully traverse for at least the following reasons.

It is respectfully noted that claim 14 has been amended (in a similar manner as claims 1 and 20, described above) to further describe and differentiate the claimed invention over the cited prior art. Thus, amended claim 14 discloses that the data lines to the left and right of the pixel electrode totally and continuously overlap the left and right sides, respectively, of the pixel electrode. In contrast, both Hasegawa and Hanazawa teach portions of the pixel electrode which are not overlapped with data lines, as shown in FIGS. 6 and 8 of Hasegawa, as well as FIGS. 1-4, 6-11 and 13-17 of Hanazawa.

Therefore, neither Hasegawa nor Hanazawa, alone or in combination, teach or suggest entire lengths of opposing edges defining a first side and a second side of the first pixel electrode along the second direction between the first gate line and the second gate line overlap the first data line and the second data line, respectively, as in amended claim 14.

Thus, it is respectfully submitted that independent claim 14, including claims depending therefrom, i.e., claims 16-19, define over the cited references.

Accordingly, it is respectfully requested that the rejection of claim 14 under 35 U.S.C. 103(a) be withdrawn.

Claims 7 and 11 stand rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Drzaic (U.S. Patent No. 6,518,949, hereinafter "Drzaic '949") in view of Hanazawa. The  
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OPP 20031201 US  
PNK-0266 (formerly YOM-0266)

Examiner states that Drzaic '949 discloses all of the elements of claims 7 and 11 except "a first pixel electrode and a second pixel electrode such that one of the gate line and the data line is interposed between the first pixel electrode and the second pixel electrode and overlaps a portion of the first pixel electrode and a portion of the second pixel electrode", which the Examiner further states is disclosed by Hanazawa, primarily at FIG. 3. Applicants respectfully traverse for at least the following reasons.

It is respectfully noted that claim 7 has been amended (in a similar manner as claims 1, 14 and 20, described above) to further describe and differentiate the claimed invention over the cited prior art. Thus, amended claim 7 discloses that the data lines to the left and right of the pixel electrode totally and continuously overlap the left and right sides, respectively, of the pixel electrode. In contrast, both Drzaic '949 and Hanazawa teach portions of the pixel electrode which are not overlapped with data lines, as shown in FIG. 1C of Drzaic '949, as well as FIGS. 1-4, 6-11 and 13-17 of Hanazawa.

Therefore, neither Drzaic '949 nor Hanazawa, alone or in combination, teach or suggest entire lengths of opposing edges defining a first side and a second side of the first pixel electrode along the second direction between the first gate line and the second gate line overlap the first data line and the second data line, respectively, as in amended claim 7.

Thus, it is respectfully submitted that independent claim 7, including claims depending therefrom, i.e., claims 9-12, define over the cited references.

Accordingly, it is respectfully requested that the rejection of claims 7 and 11 under 35 U.S.C. 103(a) be withdrawn.

Claim 5 stands rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Amundson in view of Hanazawa and further in view of Drzaic (U.S. Patent No. 7,030,412, hereinafter "Drzaic '412"). The Examiner states that Amundson in view of Hanazawa discloses all of the elements of claim 5 except "the first pixel electrode and the second pixel electrode are made of the same material", which the Examiner further states is disclosed by Drzaic '412, primarily at column 10, lines 61-62 and in FIG. 10. Applicants respectfully traverse for at least the following reasons.

Independent claim 1, from which claim 4 depends, is submitted as being allowable for defining over Amundson in view of Hanazawa, as discussed above. Furthermore, it is

respectfully submitted that “the first pixel electrode and the second pixel electrode are made of the same material”, allegedly taught by Drzaic ‘412 or any other disclosure of Drzaic ‘412 does not cure the deficiency noted above with respect to Amundson in view of Hanazawa.

Thus, it is respectfully submitted that claim 5 defines over the cited references.

Accordingly, it is respectfully requested that the rejection of claim 5 under 35 U.S.C. 103(a) be withdrawn.

Claims 3, 6 and 22 stand rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Amundson in view of Hanazawa and further in view of Yamamoto (U.S. Patent No. 6,563,260, hereinafter “Yamamoto”). The Examiner states that Amundson in view of Hanazawa discloses all of the elements of claims 3, 6 and 22 except “the insulating layer having a dielectric constant lower than 4, with the insulating layer being made of a-Si:C:O or a-Si:O:F”, which the Examiner further states is disclosed by Yamamoto, primarily at column 13, lines 48-50 and 59-64, and FIG. 3. Applicants respectfully traverse for at least the following reasons.

Independent claims 1 and 20, from which claims 3, 6 and 22 depend, are submitted as being allowable for defining over Amundson in view of Hanazawa, as discussed above. Furthermore, it is respectfully submitted that “the insulating layer having a dielectric constant lower than 4, with the insulating layer being made of a-Si:C:O or a-Si:O:F”, allegedly taught by Yamamoto or any other disclosure of Yamamoto does not cure the deficiency noted above with respect to Amundson in view of Hanazawa.

Thus, it is respectfully submitted that claims 3, 6 and 22 define over the cited references.

Accordingly, it is respectfully requested that the rejection of claims 3, 6 and 22 under 35 U.S.C. 103(a) be withdrawn.

Claim 4 stands rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Amundson in view of Hanazawa and further in view of Izumi et al. (U.S. Patent No. 7,148,867, hereinafter “Izumi”). The Examiner states that Amundson in view of Hanazawa discloses all of the elements of claim 4 except “the data line is made of a metal selected from a group consisting of Mo, Mo alloy, Cr, Ta and Ti”, which the Examiner further states is disclosed primarily in FIG. 1B, column 8, lines 10-13 of Izumi.

Independent claim 1, from which claim 4 depends, is submitted as being allowable for defining over Amundson in view of Hanazawa as discussed above. Furthermore, it is respectfully submitted that "the data line is made of a metal selected from a group consisting of Mo, Mo alloy, Cr, Ta and Ti", allegedly taught by Izumi or any other disclosure of Izumi does not cure the deficiency noted above with respect to Amundson in view of Hanazawa.

Thus, it is respectfully submitted that claim 4 is patentable over the cited references.

Accordingly, it is respectfully requested that the rejection of claim 4 under 35 U.S.C. 103(a) be withdrawn.

Claims 9 and 12 stand rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Drzaic '949 in view of Hanazawa and further in view of Yamamoto. The Examiner states that Drzaic '949 in view of Hanazawa discloses all of the elements of the abovementioned claims except "the insulating layer having a dielectric constant smaller than 4 with the insulating layer being made of a-Si:C:O or a-Si:O:F", which the Examiner further states is disclosed primarily in FIG. 3, column 13, lines 59-64 and column 13, lines 48-50 of Yamamoto.

Independent claim 7, from which claims 9 and 12 depend, is submitted as being allowable for defining over Drzaic '949 in view of Drzaic '412 as discussed above. Furthermore, it is respectfully submitted that "the insulating layer having a dielectric constant smaller than 4 with the insulating layer being made of a-Si:C:O or a-Si:O:F" allegedly taught by Yamamoto or any other disclosure of Yamamoto does not cure the deficiency noted above with respect to Drzaic '949 in view of Hanazawa.

Thus, it is respectfully submitted that claims 9 and 12 are patentable over the cited references.

Accordingly, it is respectfully requested that the rejection of claims 9 and 12 under 35 U.S.C. 103(a) be withdrawn.

Claim 10 stands rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Drzaic '949 in view of Hanazawa and further in view of Izumi. The Examiner states that Drzaic in view of Hanazawa discloses all of the elements of claim 10 except "the data line is made of a metal selected from a group consisting of Mo, Mo alloy, Cr, Ta and Ti", which the Examiner further states is disclosed primarily in FIG. 1B, column 8, lines 10-13 of Izumi.



Independent claim 7, from which claim 10 depends, is submitted as being allowable for defining over Drzaic '949 in view of Hanazawa as discussed above. Furthermore, it is respectfully submitted that "the data line is made of a metal selected from a group consisting of Mo, Mo alloy, Cr, Ta and Ti" allegedly taught by Izumi or any other disclosure of Izumi does not cure the deficiency noted above with respect to Drzaic '949 in view of Hanazawa.

Thus, it is respectfully submitted that claim 10 is patentable over the cited references.

Accordingly, it is respectfully requested that the rejection of claim 10 under 35 U.S.C. 103(a) be withdrawn.

Claims 16 and 19 stand rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Hasegawa in view of Hanazawa and further in view of Yamamoto. The Examiner states that Hasegawa in view of Hanazawa discloses all of the elements of claims 16 and 19 except "the insulating layer has a dielectric constant smaller than 4", which The Examiner further states is disclosed primarily in FIG. 3, column 9, lines 9-19 and column 13, lines 59-64 of Yamamoto.

Independent claim 14, from which claims 16 and 19 depend, is submitted as being allowable for defining over Hasegawa in view of Hanazawa as discussed above. Furthermore, it is respectfully submitted that "the insulating layer has a dielectric constant smaller than 4" allegedly taught by Yamamoto or any other disclosure of Yamamoto does not cure the deficiency noted above with respect to Hasegawa in view of Hanazawa.

Thus, it is respectfully submitted that claims 16 and 19 are patentable over the cited references.

Accordingly, it is respectfully requested that the rejection of claims 16 and 19 under 35 U.S.C. 103(a) be withdrawn.

Claim 17 stands rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Hasegawa in view of Hanazawa and further in view of Izumi. The Examiner states that Hasegawa in view of Hanazawa discloses all of the elements of claim 17 except "the data line is made of a metal selected from a group consisting of Mo, Mo alloy, Cr, Ta and Ti", which the Examiner further states is disclosed primarily in FIG. 1B, column 8, lines 10-13 of Izumi.

Independent claim 14, from which claim 17 depends, is submitted as being allowable for defining over Hasegawa in view of Hanazawa as discussed above. Furthermore, it is respectfully

submitted that “the data line is made of a metal selected from a group consisting of Mo, Mo alloy, Cr, Ta and Ti” allegedly taught by Izumi or any other disclosure of Izumi does not cure the deficiency noted above with respect to Hasegawa in view of Hanazawa.

Thus, it is respectfully submitted that claim 17 is patentable over the cited references.

Accordingly, it is respectfully requested that the rejection of claim 17 under 35 U.S.C. 103(a) be withdrawn.

Claim 18 stands rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Hasegawa in view of Hanazawa and further in view of Hirota (U.S. Patent No. 7,098,980, hereinafter “Hirota”). The Examiner states that Hasegawa in view of Hanazawa discloses all of the elements of claim 18 except “the inclination angle of the gate line or the data line relative to the surface of the substrate ranges between about 20 degrees to about 80 degrees”, which the Examiner further states is disclosed primarily in FIG. 5, column 5, lines 28-34 and 65-67 of Hirota.

Independent claim 14, from which claim 18 depends, is submitted as being allowable for defining over Hasegawa in view of Hanazawa as discussed above. Furthermore, it is respectfully submitted that “the inclination angle of the gate line or the data line relative to the surface of the substrate ranges between about 20 degrees to about 80 degrees” allegedly taught by Hirota or any other disclosure of Hirota does not cure the deficiency noted above with respect to Hasegawa in view of Hanazawa.

Thus, it is respectfully submitted that claim 18 is patentable over the cited references.

Accordingly, it is respectfully requested that the rejection of claim 18 under 35 U.S.C. 103(a) be withdrawn.

**Conclusion**

In view of the foregoing remarks distinguishing the prior art of record, Applicants submit that this application is in condition for allowance. Early notification to this effect is requested. The Examiner is invited to contact Applicants' Attorneys at the below-listed telephone number regarding this Amendment or otherwise regarding the present application in order to address any questions or remaining issues concerning the same. If there are any charges due in connection with this response, please charge them to Deposit Account 06-1130.

Respectfully submitted,

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